

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1 - 3 (canceled).

4 (previously presented). The ink jet recording apparatus of claim 5, wherein each ultraviolet light emitting diode in each ultraviolet-light-emitting-diode row is disposed in a position corresponding to the middle position between two adjacent ultraviolet light emitting diodes arranged in a neighboring one of the ultraviolet-light-emitting-diode rows, so that the ultraviolet light emitting diodes in the two adjoining ultraviolet-light-emitting-diode rows form a zigzag pattern.

5 (previously presented). An ink jet recording apparatus which includes an ink jet head whose recording-medium opposing surface that opposes a recording surface of a recording medium is furnished with an ink ejecting portion formed with open ends of a plurality of nozzle holes for ejecting a UV curable ink, and a head moving mechanism for putting the ink jet head into reciprocating motion in a predetermined direction parallel to the recording surface of the recording medium, and which performs recording by ejecting the ink from the nozzle holes of the ink jet head onto the recording surface of the recording medium and then curing the ink ejected and attached onto the recording surface of the recording medium by irradiation with ultraviolet light, at least when the head

moving mechanism puts the ink jet head into a forward motion of the reciprocating motion,

wherein the ink jet head or a moving member which moves together with the ink jet head is provided with a plurality of ultraviolet light emitting diodes for emitting the ultraviolet light to the ink attached onto the recording surface of the recording medium to cure the ink,

wherein the ultraviolet light emitting diodes, when seen from a direction perpendicular to the recording surface of the recording medium, are arranged to form one or a plurality of linear rows that extend in a direction perpendicular to the direction of the reciprocating motion of the ink jet head; and

wherein the open ends of the nozzle holes are arranged in the ink ejecting portion to form at least one or a plurality of linear rows that extend in a direction perpendicular to the direction of the reciprocating motion of the ink jet head, and the number of the ultraviolet light emitting diodes arranged in each ultraviolet-light-emitting-diode row is smaller than the number of the nozzle hole open ends existing in each nozzle-hole-open-end row.

6 (previously presented). The ink jet recording apparatus of claim 5, wherein the ultraviolet light emitting diodes existing on both ends of each ultraviolet-light-emitting-diode row are positioned outwardly of the nozzle hole open ends existing on both ends of each nozzle-hole-open-end row with respect to the direction of the nozzle-hole-open-end row.

7 (previously presented). An ink jet recording apparatus which includes an ink jet head whose recording-medium opposing surface that opposes a recording surface of a recording medium is furnished with an ink ejecting portion formed with open ends of a plurality of nozzle holes for ejecting a UV curable ink, and a head moving mechanism for putting the ink jet head into reciprocating motion in a predetermined direction parallel to the recording surface of the recording medium, and which performs recording by ejecting the ink from the nozzle holes of the ink jet head onto the recording surface of the recording medium and then curing the ink ejected and attached onto the recording surface of the recording medium by irradiation with ultraviolet light, at least when the head moving mechanism puts the ink jet head into a forward motion of the reciprocating motion,

wherein the ink jet head or a moving member which moves together with the ink jet head is provided with a plurality of ultraviolet light emitting diodes for emitting the ultraviolet light to the ink attached onto the recording surface of the recording medium to cure the ink,

wherein the ultraviolet light emitting diodes, when seen from a direction perpendicular to the recording surface of the recording medium, are arranged to form one or a plurality of linear rows that extend in a direction perpendicular to the direction of the reciprocating motion of the ink jet head; and

wherein the length, in the direction of the ultraviolet-light-emitting-diode rows, of a portion of the recording surface of the recording medium on which recording is performed in a single forward motion of the ink jet head is smaller than the length, in the

direction of the ultraviolet-light-emitting-diode rows, of a portion of the recording surface of the recording medium which can be irradiated with ultraviolet light emitted from all of the ultraviolet light emitting diodes during the single forward motion.

8 (Previously presented). The ink jet recording apparatus of claim 7, wherein a pattern mask is provided between the ultraviolet light emitting diodes and the recording medium so as to reduce difference in illumination of ultraviolet light on the recording surface of the recording medium between a portion of the recording surface which corresponds to the middle position between any two adjacent ultraviolet light emitting diodes in each ultraviolet-light-emitting-diode row and portions of the recording surface which correspond to the positions of those two ultraviolet light emitting diodes.

9 - 18 (Cancelled).

19 (Currently Amended). An ink jet recording apparatus of claim 15, wherein which includes an ink jet head whose recording-medium opposing surface that opposes a recording surface of a recording medium is furnished with an ink ejecting portion formed with open ends of a plurality of nozzle holes for ejecting a UV curable ink, and a head moving mechanism for putting the ink jet head into reciprocating motion in a predetermined direction parallel to the recording surface of the recording medium, and which performs recording by ejecting the ink from the nozzle holes of the ink jet head onto the recording surface of the recording medium and then curing the ink ejected and attached onto the recording surface of the recording medium by irradiation with

ultraviolet light, at least when the head moving mechanism puts the ink jet head into a forward motion of the reciprocating motion,

wherein the ink jet head or a moving member which moves together with the ink jet head is provided with a plurality of ultraviolet light emitting diodes for emitting the ultraviolet light to the ink attached onto the recording surface of the recording medium to cure the ink, wherein the apparatus is configured so that the ultraviolet light emitted from the ultraviolet light emitting diodes is applied via a transparent light guiding member to the ink attached to the recording medium, the ultraviolet light emitting diodes being placed in a case, the ultraviolet light being emitted through a surface of the case, the case [[is]] being disposed at least rearward of the ink ejecting portion with respect to the direction of the forward motion of the ink jet head, and

the ultraviolet light emitting surface of the case [[is]] being tilted with respect to the recording medium opposing surface of the ink jet head so that the side of the ultraviolet light emitting surface closer to the ink ejecting portion is located closer to the recording medium than the opposite side of the case is.

20 - 51 (cancelled).

52 (previously presented). An ink jet recording apparatus to perform recording by ejecting an UV curable ink onto a recording surface of a recording medium comprising:

an ink jet head having a recording medium opposing surface that opposes the recording surface of the recording medium, the recording medium opposing surface

including a plurality of nozzle holes to eject a UV curable ink on the recording surface of the recording medium;

a carriage configured to put the ink jet head into reciprocating motion in a first direction parallel to the recording surface of the recording medium, the nozzle holes being arranged to form one or a plurality of linear ink holes rows that extend in a second direction perpendicular to the first direction; and

a plurality of ultraviolet light emitting diodes configured to emit ultraviolet light to the UV curable ink ejected onto the recording surface of the recording medium to cure the UV curable ink, the ultraviolet light emitting diodes being arranged to form one or a plurality of linear ultraviolet light emitting diode rows that extend in the second direction, wherein the number of the ultraviolet light emitting diodes in each of the linear ultraviolet light emitting diode rows is smaller than the number of nozzle holes in each of the nozzle holes rows.

53 (previously presented). The ink jet apparatus according to claim 52, wherein each ultraviolet emitting diode in each of the linear ultraviolet light emitting diode rows is disposed in a position corresponding to a middle position between two adjacent ultraviolet light emitting diodes arranged in a neighboring one of the plurality of the linear ultraviolet light emitting diode rows, so that the ultraviolet light emitting diodes in the two adjoining linear ultraviolet light emitting diode rows form a zigzag pattern.

54 (previously presented). The ink jet recording apparatus according to claim 52, wherein the ultraviolet light emitting diodes existing on both ends of each of the linear

ultraviolet light emitting diode rows are positioned outwardly of the nozzle holes existing on both ends of each of the linear nozzle holes rows with respect to the second direction.

55 (previously presented). An ink jet recording apparatus to perform recording by ejecting an UV curable ink onto a recording surface of a recording medium comprising:

an ink jet head having a recording medium opposing surface that opposes the recording surface of the recording medium, the recording medium opposing surface including a plurality of nozzle holes to eject a UV curable ink on the recording surface of the recording medium;

a carriage configured to put the ink jet head into reciprocating motion in a first direction parallel to the recording surface of the recording medium, the nozzle holes being arranged to form one or a plurality of linear ink holes rows that extend in a second direction perpendicular to the first direction; and

a plurality of ultraviolet light emitting diodes configured to emit ultraviolet light to the UV curable ink ejected onto the recording surface of the recording medium to cure the UV curable ink, the ultraviolet light emitting diodes being arranged to form one or a plurality of linear ultraviolet light emitting diode rows that extend in the second direction, wherein a length, in the second direction, of a first area onto which the nozzle holes eject the UV curable ink during a single forward motion of the ink jet head by the carriage is smaller than a length in the second direction, of a second area onto which the ultraviolet light emitting diodes emit the ultraviolet light during the single forward motion.

56. (canceled)